degrade on exposure to UV light.

The material as now defined is a commercially viable material which is the result of an optimisation of conflicting material properties. The composite has an adhesive with a

compatible fire retardant material present in sufficient quantity to meet the requirements of the test DIN 4102:B2 while still meeting the optical requirements necessary for transparent shades with regards to transparency and haze, and which is sufficiently resistant to the long term effects of UV light.

Quite simply no prior art material meets these requirements.

The claimed composite differs from the composite disclosed in Valinski in that the adhesive comprises a polyurethane resin containing a different fire retardant material, in this case RDP fire retardant and different composite structure. The two PET outer film layer are both defined as containing UVA so that any FR material within the composite is protected by the UV absorber. The composite meets the fire retardant standard DIN 4102:B2.

Valinski does not disclose such a material.

The assignee of the present application is also the assignee of the Valinski application and we attach herewith an Affidavit from Anthony Brian Port, a senior research chemist employed by CPFilms Inc as evidence that the material taught in Valinski did not meet the tight fire standard DIN 4102:B2 and had very poor weatherability with the FR containing layer of the material made according to Valinski, tended to excess bronzing and yellowing on aging.

Valinski does not recognise the problems associated with the aging of polymeric coatings or layers containing FR material. Although Valinski states that UV absorbers may be incorporated into the PET film (page 8 line 22, page 11 line9-11) he does not recognise the problems associated with long term exposure of the film to light. As

evidence of this, it can be seen that every film composite structure shown in Figs 1-7 in Valinski has an FR Coating layer (2) as an external layer. Valinski even states on Page 10 lines 22-23 that "the flame retardant coating 2 is on the top surface", and in line 26 " that the coating (2) ( that is the FR coating) may optionally be on both exposed surfaces. Valinski is simply totally unaware of the weathering problem.

The present invention provided that in a film composite the positioning of the two UV absorbing PET layers as the outside layer in the composite inhibits the layers containing the FR materials from yellowing or bronzing on aging. Valinski is totally silent on the relative positioning of the FR coating and the PET layers containing UVA.

The applicant has discovered the problems associated the weathering of film composites containing FR materials and the present Invention provides a film composite structure that meets stringent FR requirements and has good aging capability.

The aging problems of film composite containing FR materials are not disclosed or discussed in any of the cited prior art.

The FR material Rescorcinol bis(diphenyl phosphate) (RDP) as disclosed in Levchik may be added to polyester compositions to improve fire retardency (the Applicant would observe that in the present invention as now claimed, the RDP fire retardant is specified for use in the polyurethane adhesive layer NOT the PET layer). However, whilst teaching that RDP is suitable for use in some polyester compositions in the presence of a high charring polymer, and makes no reference whatsoever to the possible effects of fire retardant on the optical properties of the material to which the fire retardant is added, or to the problems associated with aging.

WO96/06885 (Blundell) has now been cited to show that RDP can be added to urethanes without migration to the surface so making it obvious to replace the brominated FR in Valinski with RDP. Blundell related to polyurethane foam materials. A person skilled in the art would know that just because a compound

such as RDP is non-migratory in a polyurethane foam at 100C, that it will not neccessarily behave similarly in an isocyanate crosslinked polyester PS adhesive (polyester urethane for short) in a window film application. The two materials are too different to infer from the solubility characteristics for RDP in one material (Blundell) what would be the solubility characteristics in the other material, nothing at all can be inferred about the temperature dependence of solubility coefficients - that is just

too difficult even for those highly skilled and experienced in the art. Furthermore Blundell is totally silent on the effects of FR material on either the optical properties of film or aging.

It is therefore submitted that present film composite is not obvious in view of a combination of both Valinski, Levchik or Blundell. The deficiencies of Valinski are not readily satisfied by the disclosures in Levchik. The three documents in combination do not point the way to the use of RDP as a fire retardant material in polyurethane adhesives and nor do they deal with the problems associated with the effect of fire retardants on the optical properties of the material to which it is added, or the effects of aging on the fire retardant filled composite.

The applicant is the first to arrive at a shade material which is clear, transparent, has little haze, meets the fire retardant standard to DIN 4102:B, and overcomes the problems associated with aging of the FR film composite. This problem with FR containing composites is not disclosed in any of the cited art.

The applicant acknowledges that the use of PET film containing FR materials is not new and that the use of UV absorbers with PET is known. However, the present invention relates to a composite film in which two PET layers are adhered together by a polyurethane adhesive containing RDP fire retardant. Such a composite material was not known. Furthermore the invention discloses that the two outer PET layers both contain UV absorber to avoid aging problems associated the layers containing the FR material. This problem is not mentioned or dealt with in any single piece of prior art.

The applicant has invented a shade composite film which meets the most stringent FR requirements (DIN 4102:B2), is transparent with low haze, and has good resistance to deterioration due to rapid breakdown of the FR material. This specific combination of features is not shown in the prior art.

With regard to the Examiners comments on Claim 11 & 19, since the film composites

as defined within those claims are of themselves inventive, then it is respectfully submitted that the objections to these Claims should be waived. The present invention as claimed in Claim 19 is the first disclosure of a sun shade having sound deadening characteristics. Once the present invention has been conceived, then in hindsight it might be obvious to use the teachings of Fuchs and Jablonka. However, the invention is the realisation that a shade can also be used for sound deadening. Fuchs and Jablonka are silent on FR Properties just as Valinski, Blundell and Levchik are silent on sound deadening. The applicant's realisation that a FR film composite can be used for the manufacture of sound deadening shades is novel and not obvious. The putting together of this combination of documents is really only possible ex-post facto of the invention.

None of the cited art, either singly or in combination, discloses the invention as now claimed in Claims 1, 11, & 19.

In further support of non-obviousness of the above identified application as presently claimed, enclosed is the Declaration of Anthony Brian Port and Exhibits A through E.

For the reasons given above, it is believed that the claims as presently amended should now be allowable and such action is respectfully requested.

If the examiner feels that there are still a few minor matters to be resolved before issuing a notice of allowance, Applicants' attorney would welcome a phone call from the Examiner at the below listed phone number.

Respectfully submitted,

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